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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/515,239 | 03/06/2000 | Ju Cheon Yeo | 8733.20093 | 7949 |

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MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

KUMAR, SRILAKSHMI K

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2675

DATE MAILED: 06/27/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/515,239

Applicant(s)

YEO ET AL.

Examiner

Srilakshmi K. Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment C, March 17, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The following office action is in response to Request for Continued Examination, filed June 17, 2003 and Amendment C, filed March 17, 2003, which has now been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahan (GB 2,325,329 A) and in further view of Bassetti, Jr. (US 5,122,783).

As to independent claims 1 and 11, Ahan disclose a liquid crystal device and a method for driving a liquid crystal display device (Fig. 2), having a demultiplexer unit (Fig. 2, item 54) connected between a data driving circuit (40) and a plurality of data lines on a liquid crystal panel, the demultiplexer unit (54) distributing color data signals from any one of the output terminals of the data driving circuit to the plurality of data lines on the liquid crystal panel (Fig. 2, page 8, lines 24-page 9, lines 29 and page 6, line 31-page 7, line 5), the method comprising, classifying color data signals to be applied to the demultiplexer unit from the data driver circuit by colors (Fig. 2, page 8, lines 24-page 9, lines 29 and page 6, line 31-page 7, line 5);

Ahan do not teach consecutively providing the color data signals having a same color to the data lines by the demultiplexer unit before applying a different color. Bassetti disclose in Fig. 3A, and in col. 6, lines 47-68, where color data signals having a same color are

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consecutively provided to the data lines before applying a different color. It would have been obvious to one of ordinary skill in the art to incorporate the feature of Bassetti into that of Ahan as they both teach a method of driving liquid crystal displays. The system of Bassetti is advantageous as it reduces the number of scanning lines, thus reducing power consumption and expense.

As to claims 2 and 12, limitations of claims 1 and 11, and further comprising wherein the color data signals are applied to the data lines on the liquid crystal panel in a combination of sequences of color data signals of red, green and blue (page 6, line 31-page 7, line 5).

As to claims 3 and 13, limitations of claims 2 and 12, and further comprising wherein the color data signals are applied to the data lines on the liquid crystal panel in a sequence of red, green and blue signals (page 6, line 31-page 7, line 5).

As to claims 4, 5, 14 and 15, limitations of claims 2 and 12, and further comprising wherein the color data signals are applied to the data lines on the liquid crystal panel in a sequence of green, blue and red signals or blue, red and green, (page 6, line 31-page 7, line 5). Ahan and Bassetti do not state this explicit sequence. Further Bassetti state the RGB arrangement of the color filter is made as indicated in Fig. 3A, but it would have been obvious to one of ordinary skill in the art that the RGB arrangement is not limited to that in this mode, therefore the sequence of the color data signals can be changed as it would not make much difference of the order of the sequence of the signals.

As to claims 6 and 16, limitations of claims 1 and 11, and further comprising wherein the classifying step includes arranging the color data signals according to a sequence of dot inversion system (Bassetti, Fig. 3A) where each contiguous pixel of liquid crystal panel has a reverse

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polarity. Although Ahan and Bassetti do not disclose where each contiguous pixel of the liquid crystal panel has a reverse polarity, it would have been obvious to one of ordinary skill in the art that this feature could have been present as this feature enables higher resolution and picture quality.

As to claims 7 and 17, limitations of claims 1 and 10, and further comprising wherein the demultiplexer unit includes a plurality of demultiplexers as shown in Fig. 8, item 25.

As to claims 8, 10, 18 and 20, limitations of claims 7 and 17, and further comprising wherein each of the plurality of the demultiplexers is connected to at least five or in multiple of six data lines on the liquid crystal panel. Though Ahan, in Fig. 2, shows the data lines (DL1 to DL2400) connected to the demultiplexer (54), it would have been obvious to one of ordinary skill in the art to be able to increase the data lines to five or six as this would enable higher resolution and increased picture quality in the liquid crystal display.

As to claims 9 and 19, limitations of claims 7 and 17, and further comprising wherein each of the plurality of demultiplexers is connected to an odd number of data lines as shown in Fig. 2.

Response to Arguments

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

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With respect to the arguments of Prior art Cairns et al having a date after the priority of the instant application, examiner has withdrawn the rejection using Cairns et al and has submitted a new rejection using Ahan as is shown above.

4. Applicant's arguments filed March 17, 2003 have been fully considered but they are not persuasive.

With respect to applicant's arguments of Bassetti et al, examiner respectfully disagrees. With respect to independent claims 1 and 11, Bassetti discloses in Fig. 3A and in col. 7, lines 1-31 for consecutively providing the color data signals having the same color before applying a different color. Bassetti discloses where the sub-areas are energized, where the sub areas are shown in col. 6, lines 52, to be items 311, 312 and 313, which are individual colors. Thus it is shown by Bassetti that each sub area is energized.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Srilakshmi K. Kumar** whose telephone number is **(703) 306 5575**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703 305 47000377.

Srilakshmi K. Kumar
Examiner
Art Unit 2675

SKK
June 25, 2003



STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600